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File Code: 2580

Date: November 7, 2007

Mr. James E. Sydnor  
Air Division Director  
Virginia Department of Environmental Quality  
PO Box 1105  
Richmond, VA 23218

Dear Mr. Sydnor:

On October 1, 2007, the State of Virginia submitted a draft implementation plan describing your proposal to improve air quality regional haze impacts at mandatory Class I areas across your region. We appreciate the opportunity to work closely with the State through the initial evaluation, development, and, now, subsequent review of this plan. Cooperative efforts such as these ensure that, together, we will continue to make progress toward the Clean Air Act's goal of natural visibility conditions at our Class I wilderness areas and parks.

This letter acknowledges that the U.S. Department of Agriculture, U.S. Forest Service has received and conducted a substantive review of your proposed Regional Haze Rule implementation plan. Please note, however, that only the U.S. Environmental Protection Agency (EPA) can make a final determination about the document's completeness, and therefore, only the EPA has the ability to approve the document. The Forest Service's participation in the State of Virginia's administrative process does not waive any legal defenses or sovereignty rights it may have under the laws of the United States, including the Clean Air Act and its implementing regulations.

Our review focused on eight basic content areas. The content areas reflect priorities for the Federal Land Manager agencies, and we have attached comments to this letter associated with these priorities. We look forward to your response required by 40 CFR 51.308(i)(3). For further information, please contact Cindy Huber at (540) 265-5156 or Ann Mebane at (307) 578-8241.

Again, we appreciate the opportunity to work closely with the State of Virginia. The Forest Service compliments you on your hard work and dedication to significant improvement in our nation's air quality values and visibility.

Sincerely,

/s/ Maureen T. Hyzer  
MAUREEN T. HYZER  
Forest Supervisor

cc: Doris McLeod  
Charles E Sams  
Ann E Mebane  
Holly Salazer



Bruce Polkowsky  
Tim Allen  
Ann Mebane  
Ellen Wentworth

Enclosure

*Enclosure*

*Forest Service Technical Comments on VDEQs Draft Regional Haze State Implementation Plan*

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*Overall Comments*

As stated in our letter, we feel that your agency has addressed each of the priority content areas with which the Federal Land Managers (FLMs) are concerned in the draft Regional Haze Regulations State Implementation Plan (SIP), and we are very pleased with the overall content and quality of the document. This includes, but is not limited to, clearly defining results and methods used to develop visibility goals for James River Face Wilderness as well as the uniform rate of progress necessary to achieve natural conditions by 2064; emissions inventories used to develop 2018 projections; coordination and consultation measures; the long term strategy and sources considered under further reasonable progress; and the area of influence analysis results. In particular, we were pleased to see that the Virginia Department of Environmental Quality (VDEQ) included information about the impacts of sources within Virginia on Class I areas outside of the Commonwealth, and impacts of sources outside of Virginia on James River Face Wilderness.

We also appreciate that VDEQ clearly described reasonable progress goals for the James River Face Wilderness for both the 20% worst and 20% best visibility days. The addition of images depicting various visibility conditions at the Class I areas would enhance the discussion of goals. We suggest using WinHaze software to create images of current and natural visibility conditions for James River Face and Shenandoah, as well as images depicting the final reasonable progress goal for 2018.

VDEQ has assessed specific Virginia (VA) sources for further reasonable progress in Section 7.7 and although it was determined that most units would not require additional control, we understand that the analysis for Mead Westvaco is still underway. Considering that this source has the largest fractional contribution to visibility impairment at James River Face, we will be very interested in the results of the control technology review due in June 2008 and of VDEQs final determination.

There is one thing that was not required in the SIP, but is of concern to the FLMs; the relationship between the Regional Haze Plan and the Prevention of Significant Deterioration permitting process. Given the uncertainty in the new source growth estimates used to develop the 2018 emissions inventory, and ultimately 2018 visibility projects, we feel it would be appropriate for VDEQ to discuss the relationship between the regional haze plan and the requirements under the Prevention of Significant Deterioration (PSD) program within the VA SIP. In other words, how does VDEQ anticipate addressing new sources of air pollution; specifically how emissions from these new sources will affect progress toward the interim visibility goals established under this SIP?

Finally, we recognize that the Regional Planning Organizations have provided significant resources to the states throughout the Regional Haze planning process, and that it will be detrimental to the state agencies if these resources are no longer available for subsequent planning and periodic SIP reviews. We will strongly encourage the EPA to maintain support for the Regional Planning Organizations and the integrated technical analyses that will be necessary as we begin tracking reasonable progress for the Class I areas under the Regional Haze State Implementation Plans.

### **Specific Comments**

While overall we are very satisfied with the extent of the information provided in the VDEQ SIP, we have several comments that we feel may increase the clarity of some sections. The following comments are organized by Section of the draft SIP.

#### ***Executive Summary:***

pg. ii, Paragraph 1, 2<sup>nd</sup> to last sentence – Is the phrase “including the 21 Class I Wilderness Areas” referring to the Class I wilderness areas in VISTAS? If so, the number should be 18.

#### ***Section 1: Introduction***

Page 4, paragraph 2 – Instead of “emission sources within Virginia may affect visibility at following Class I areas in neighboring states” perhaps the text should say “emission sources within Virginia may affect visibility at Class I areas in neighboring states (and then list the Class I areas or point to where they are listed).”

Page 6, Figure 1.5-1 – The acreages for some of the Class I areas are incorrect. The correct acreages can be found on the spreadsheet distributed by Pat Brewer on or around October 30, 2007.

Page 10, Table 2.3-1 - The value for “average 20% worst days-Bext” for James River Face should be 30.9 instead of 30.8. We checked the ARS report and the value is 30.88 which would round to 30.9.

Page 15 – We suggest that you remove “Reasonable” from the title on graphic for Figures 3.1-1 and 3.1-2.

Page 15 - In conjunction with the issue of correcting substitution errors, our visibility analyst, Scott Copeland, recalculated natural background values. His results show that natural background visibility for the 20% worst days at James River Face is 11.13 dv rather than 11.20 dv as shown in Figure 3.1-1. If 11.13 dv is used for natural background, the 2018 value on the glide path becomes 24.92 dv.

***Section 4.1: Baseline Emissions Inventory***

Page 23, 4<sup>th</sup> paragraph – The statement, “Thus, fire emissions remain the same for air quality modeling in both the base and any future years” is incorrect, and we recommend deleting the sentence. Fire emissions for 2009 and 2018 were increased in all states except Florida to reflect anticipated increases in the use of prescribed fire as a management tool on federal lands. This is discussed on page 25 of the draft SIP.

***Section 6: Model Performance Evaluation***

Page 40, 2<sup>nd</sup> paragraph – Please check the discussion of information contained in Figures 6.3-1 and 6.3-2, currently the text is not accurately describing the charts nor does the text reference the figure being discussed. The text states that the bar charts under-predict light extinction and sulfate, but the bar chart for the 20 percent best days at Shenandoah shows the model over-predicting light extinction. The chart for James River Face shows a mix of over- and under-prediction of light extinction and sulfate on the best days.

***Section 7: Long Term Strategy***

Page 43 – The long term strategy must address Class I areas that Virginia impacts as well as its own class I areas, so the title should reflect that or simply say “Long Term Strategy”. As currently written, the title implies that the SIP only has to address VA Class I areas.

Page 44 – We suggest that the recent AEP Consent Agreement also be listed, especially noting any changes that will be made to Virginia units. We also suggest making any necessary changes to Table 7.7.4-2.

Page 46, Section 7.2.2 – We suggest making reference to where this discussion is located in the draft SIP (Section 7.9, page 81).

Pages 50 and 51 – Consider using only the New IMPROVE algorithm results in the discussing Figures 7.2.4-3 and 7.2.4-4. And if available, use charts that show results using only the New IMPROVE algorithm, because this is what was used in the analyses and draft SIP. Using only the new algorithm, visibility improvements on the worst days at the Virginia Class I areas appear to be 155-175 percent.

Page 53 - Consider adding (SHEN) following Shenandoah, and (JARI) following James River Face in the first sentence under Figure 7.3-1. This would help the reader select the appropriate bars in the chart for the Virginia Class I areas.

Page 54 - Figure 7.3-2 shows glidepaths which subtract the international contribution from the endpoint, while leaving it in the baseline. This is somewhat misleading and does not reflect the preceding narrative. We think that the graph should be changed to reflect the uniform rate of progress glidepaths in Figures 3.1-1 and 3.1-2 and then show

the effect of removing the incremental contribution due to international emissions in 2018.

### ***Section 7.5: Area of Influence***

Section 7.5 of the SIP identifies the geographic areas of influence for James River Face. The Area of Influence (AOI) discussion is of particular importance to the Forest Service FLMs for several reasons. First, the information provided by the VISTAS Regional Planning Organization (RPO) allowed the states and FLMs to come to consensus on the realm of sources to be considered under further reasonable progress assessments for the VISTAS states, including Virginia (consultation meeting the week of June 12, 2007). Second, the AOI analysis can assist the VISTAS states in identifying sources anticipated to affect visibility in 2018 whether for Class I areas within their state, or for Class I areas in neighboring states. This source-specific information has provided a basis for state-to-state consultation both within the VISTAS region, and with states outside of the VISTAS RPO. Finally, the AOI information can assist states in highlighting which sources they may need to follow up with in subsequent planning and review periods as they track progress towards the national visibility goal. Because the AOI information can serve so many purposes we have a few suggestions to help clarify Section 7.5.

Pages 62 & 63 - The graphics in Figures 7.5.4-1 and 7.5.4-2 could be modified to show only the AOI metrics VDEQ decided to utilize (in consultation with other VISTAS states and the FLMs) to consecutively narrow the potential list of sources for inclusion in the final AOI (i.e. Only show the lines for Residence Times greater than 5% and 10%, and not the 100 and 200 km radii).

Page 63 - Table 7.5.4-3 shows a state-by-state contribution metric based on the VISTAS analysis. For clarity, we suggest that VDEQ identify in this table heading, and the following text, that these are not results from a source apportionment modeling exercise, but rather a relative metric based on the magnitude of emissions from a source, its distance to the Class I area(s) of concern, and the sulfate extinction weighed residence time plots, developed using back- trajectories. In other words, it is not an exact quantification of the source-by-source contributions to visibility impairment on the 20% worst visibility days at a specific Class I area, but a relative metric used to infer this determination. (Concurrently, this clarification and distinction should be made on page 70 of the draft document where VDEQ identifies the threshold used for identifying sources to consider under further reasonable progress.)

### ***Section 7.7: Reasonable Progress***

Pages 70, 71 & 72 - Tables 7.7.4-2 and 7.7.5-1 display the units within VA (and within the AOI) that have a fractional contribution of more than 1% to any Class I area. This presentation by Class I area is exactly what the FLMs wanted to see. To make the picture complete it should include the out-of-state sources affecting the VA Class I areas. For example, the John E Amos EGU in West Virginia and Duke Energy-Dan River EGU in North Carolina both have units that exceed the 1% contribution level. Addition of these

sources would provide a clear picture of ALL sources in that “over 1% contribution” category. If this is not possible, then a reference to the specific page in Attachment H-1 which shows all contributing sources by Class I area would be helpful.

Page 73, Section 7.7.5.2.2 – We suggest strengthening this section which addresses the Reasonable Progress analysis for Mead Westvaco. This source has the largest fractional contribution to visibility impairment in the AOI (18.7%), and as such is of particular importance to visibility improvement at James River Face Wilderness. Mead Westvaco is also within the Dolly Sods/Otter Creek AOI. We recommend including additional information from the letter to Mead Westvaco (Attachment H-2) in this section of the body of the SIP; particularly the timeline for submission of the control technology review (by June 1, 2008) and anticipated permitting schedule (in concert with the 2012 progress report), should it be determined that controls are feasible. Also, because this source may remain a primary contributor to visibility impairment at the Class I area in 2018, and would have to assess additional control technology at that time, we encourage VDEQ and Mead Westvaco to take this into consideration in their determinations.

Page 75, Section 7.7.5.2.6 – One use of AOI information is to identify sources that will most likely be evaluated for additional emission reductions at the mid-course review or in the next planning period. For example, while the cost of applying controls to the coal-fired boilers at Cinergy Solutions of Narrows (\$3,140/ton SO<sub>2</sub> removed) may be considered prohibitive now, this cost may be reasonable in the next planning period. We suggest that VDEQ acknowledge this source as a candidate for review in future planning periods similar to what was done in Section 7.7.5.2.1 for International Paper Company.

With the possible exception of Mead Westvaco, it appears that no additional controls will be implemented as a result of the Reasonable Progress evaluation. However, the addition of a column to Table 7.7.4-2 showing conclusions of the evaluation would be helpful to the reader. Perhaps the column would indicate the factor that determined additional controls were infeasible (lack or expense of control technology). If the BART control determinations could also be added, the reader would get a clear picture of controls and emission reductions in one table

### ***Section 7.8: BART***

Page 77 - Table 7.8.2-1 provides complete information on BART exemption modeling for Virginia sources affecting any Class I area within 300 km. Again, we are happy to see that VDEQ included all Class I areas, not just those within Virginia.

Page 80 –The preliminary BART determination table is very useful and provides a lot of information. It would be nice to be able to compare the 2018 pre-BART emissions for each source with projected emissions with BART. One way to do this would be to add a column to Table 7.7.4-2 for emissions after BART and Reasonable Progress controls have been applied.

We noticed one inconsistency in Table 7.7.4-2 for emissions from Georgia-Pacific Big Island. The 2002 SO<sub>2</sub> emissions for boiler #5 are 251 tpy. But the descriptions of BART for this source on pages 74 and 80 indicate a higher number, 374 tpy. We expected the emissions after application of BART to be lower than the original emissions. Please explain why the 2018 emissions increase after BART is applied.

***Section 7.9: Additional Emissions Controls Considered***

Page 81 - Section 7.9.1 addresses smoke management and we agree with the statements that are made, however it would clarify the section to include a sentence addressing whether VDEQ agrees that the existing smoke management guidelines currently provide adequate protection for visibility.

***Section 8: Reasonable Progress Goals***

We understand that the goals may be modified following the final CMAQ model run, and that the goals will be at least as stringent as those from the Base2Ga model run shown in Table 8.0-1.

***Section 11: Comprehensive Periodic Implementation Plan Revisions***

While large sulfur dioxide emissions reductions are anticipated under CAIR, EGU emissions are expected to remain a significant contributor to regional haze in 2018 even after implementation of this Federal Rule. Additionally, while at least a 6.7 deciview improvement on the worst days is expected within the first planning period, chiefly due to implementation of CAIR, an additional 11.2 deciview of improvement will be necessary to achieve natural background visibility for James River Face. Given that additional EGU reductions will still be necessary after 2018, and that there is a fair amount of uncertainty surrounding the modeling analyses conducted for future year projections as well as what is actually going to occur under CAIR, the tracking and review periods under the Regional Haze Regulations become increasingly important from the FLMs perspective. We are pleased to see VDEQs commitment to completing the reasonable progress reports every five years, as well as comprehensive SIP revisions in subsequent planning periods, in accordance with the Regional Haze Regulations.

We are also pleased to see that VDEQ has included measures for ongoing consultation with the FLMs on page 90, and included annual discussions of the implementation process and the most recent IMPROVE monitoring data. We recommend adding the following sentence to clearly define “ongoing consultation” for future planning periods. *“Consultation between VDEQ and the FLMs will include early involvement of FLMs in the periodic review process and FLMs will receive copies of revised regional haze SIPs for comment prior to finalization.”* We feel that clearly establishing the process for FLM consultation in the SIP document may eliminate any confusion as to what “ongoing consultation” requires in future years.